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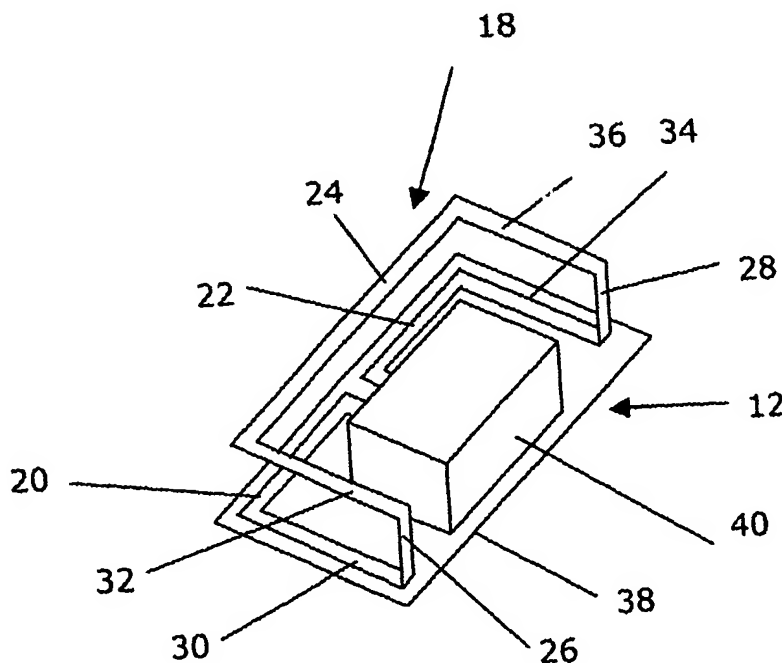
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(54) Title: WIDEBAND LOOP ANTENNA



(57) Abstract: The present invention relates to a wireless communication device and an antenna arrangement in such a device, where a loop antenna element (18) comprises: a first section (20) provided in and extending a length in a first plane, a second section (22) spaced from, provided in and extending a length in the first plane, a third section (24) in a second plane parallel to the first plane, aligned with the first and second sections, and a fourth (26) and a fifth section (28) interconnecting antenna sections in the first and second planes. The sections form a three-dimensional structure having a substantial two-dimensional extension in at least one of the first and second planes. The second section extends along the same line as the first section or has a curvature, which is a continuation of the curvature of the first section. Thereby a small wideband antenna requiring a small ground plane is obtained.

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/11532

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H01Q7/00 H01Q9/26 H01Q1/24

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data, INSPEC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No. |
|------------|--|-----------------------|
| X          | US 2002/018021 A1 (MORISHITA HISASHI ET AL) 14 February 2002 (2002-02-14)<br>the whole document  | 1-18                  |
| X          | GB 692 692 A (CHARLES ALEXANDER VIVIAN HEATH) 10 June 1953 (1953-06-10)<br>page 11, line 32 - line 57; figure 39                           | 1,3-9,<br>13,16       |
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☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Information on patent family members

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| Patent document<br>cited in search report |    | Publication<br>date | Patent family<br>member(s)                          | Publication<br>date                    |
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